CLAIMS:

1. A method for improving electrical energy transfer from electroluminescent organic molecules (12) to quantum dots (14) embedded in a organic material matrix, the method comprising the steps of

- providing a matrix (10) of electroluminescent organic molecules with embedded quantum dots,
- providing one or more transfer molecules (15) on the surfaces of the quantum dots,
- supplying electrons and holes to the matrix using first and second electrical contacts (4, 6) in electrical contact with the organic matrix,
- generating excited states in the electroluminescent organic molecule of the matrix in the form of excitons,
- transferring excitons from the electroluminescent organic molecule to the transfer molecules on the quantum dots, and
- transferring excitons from the transfer molecules to the quantum dots.

2. The method according to claim 1, wherein the step of providing a matrix of electroluminescent organic molecules with embedded quantum dots, comprises the step of preparing the matrix from a solution of organic molecules and quantum dots.

3. The method according to claim 1, further comprising the step of confining electrons and holes in the matrix by providing electron and hole blocking layers adjacent to the matrix.

4. The method according to claim 1, wherein the step of providing one or more transfer molecules comprises a step of selecting transfer molecules which have a bandgap, $E_{transfer}$, which is smaller than a bandgap, $E_{org.\ mol.}$, of the electroluminescent organic molecules and larger than a bandgap, E_{QD}, of the quantum dots.

5. The method according to claim 1, wherein the step of providing one or more transfer molecules comprises a step of selecting phosphorescing transfer molecules.

6. The method according to claim 1, wherein the step of providing one or more transfer molecules comprises a step of selecting transfer molecules so that a transfer rate of excitons from the electroluminescent organic molecules to the transfer molecules is larger than a decay rate of excitons in the electroluminescent organic molecules.

7. The method according to claim 1, wherein the step of providing one or more transfer molecules comprises a step of selecting transfer molecules so that a transfer rate of excitons from the transfer molecules to the quantum dots is larger than a decay rate of excitons in the transfer molecules.

8. A quantum dot embedded organic molecules device (2) with improved electrical energy transfer from electroluminescent organic molecules (12) to embedded quantum dots (14), the device comprising

- a matrix (10) of electroluminescent organic molecules embedded with quantum dots, and
- first and second electrical contacts (4,6) for supplying electrons and holes to the matrix,

wherein a quantum dot has one or more transfer molecules (15) attached to its surface for receiving excitons generated in the electroluminescent organic molecules and transferring received excitons to the quantum dot, the transfer molecules being chosen so that a transfer rate of excitons from the electroluminescent organic molecules to the transfer molecules is larger than a decay rate of excitons in the electroluminescent organic molecules.

9. The device according to claim 8, wherein the one or more transfer molecules are chosen so that a transfer rate of excitons from the transfer molecules to the quantum dots is larger than a decay rate of excitons in the transfer molecules.

10. The device according to claim 8, wherein the electroluminescent organic molecules are electroluminescent polymers.

11. A process for fabricating a light emitting quantum dot embedded organic device (2) with improved electrical energy transfer from electroluminescent organic molecules (12) to quantum dots (14), the process comprising the steps of:

a. providing a plurality of electroluminescent organic molecules in solution,
b. providing a solution comprising a plurality of quantum dots with one or more transfer molecules (15) attached to the surfaces, the transfer molecules having a bandgap, $E_{transfer}$, which is smaller than a bandgap, $E_{org.\ mol.}$, of the electroluminescent organic molecules and larger than a bandgap, E_{QD}, of the quantum dots,
c. mixing the electroluminescent organic molecule solution with the quantum dot solution,
d. providing a first electrical contact (6),
e. forming a matrix (10) of electroluminescent organic molecules with embedded quantum dots on the first electrical contact by depositing the mixed solution on the first electrical contact, and
f. depositing a second electrical contact (4) on the matrix.

12. The process for fabricating according to claim 11, further comprising the steps of forming, between the matrix and the first or second electrode, a material layer for enhancing hole transport and deteriorating electron transport.

13. The process for fabricating according to claim 11, further comprising the steps of forming, between the matrix and the second or first electrode, a material layer for enhancing electron transport and deteriorating hole transport.